

REMARKSA. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the position that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the Declaration of Mr. Nakajima, the amendments to the specification, the amendments to the claims and the following remarks.

B. The Invention

The present invention is directed to a photothermographic dry imaging material that exhibits excellent antistatic properties relating to transfer and tackiness under high temperature and high humidity environments (page 4, line 17 to page 5, line 3).

In one of the novel aspects of the invention, the polymer layer of the photothermographic material contains copolymer of a fluorine containing acrylate or a fluorine containing methacrylate represented by Formula (1) and a monomer having a hydrophobic group.

C. Claim Amendments

Claims 1-10 are original claims in this Application. This amendment adds claim 5 to claim 1 and cancels claim 5, thus, claims 1-4 and 6-10 are presented for further prosecution.

Claim 1 now recites that the fluorine containing acrylate or a fluorine containing methacrylate is represented by Formula (1).

D. Specification Amendments

Pages 6 and 54 have been amended to correct obvious typographical errors.

Table 1-b appearing at page 56 mistakenly omitted Comparative Sample Nos. PA-16 and PA-17 described at page 54. A replacement Table 1-b has been provided.

Page 62 has been amended to explain that polymer PA-15 was changed to comparative polymers PA-16 "and PA-17" during the preparation of coating compositions 16 and 17.

Page 62 now coincides with Table 2 at page 77.

Table 2 has been amended to illustrate that copolymer PA-16 contains 100% R-1420. As explained at page 54, copolymer PA-16 was prepared in accordance with copolymer PA-14, except that copolymer PA-16 contains no hydrophobic monomers. An amended Table 2 has been provided.

E. Rejections under 35 USC 102(b) based on Sampei

Claims 1, 4-6, 8 and 9 had been rejected as being anticipated by Sampei (US 6,190,854). Sampei had been cited to teach a photothermographic material having a copolymer layer composed of a fluorine containing monomer and a monomer having a hydrophobic group.

1. Sampei provides no teaching or suggestion to select a copolymer having the specific fluorine containing monomer of claim 1

Claim 1 has been amended to recite that the fluorine containing acrylate or fluorine containing methacrylate is represented by Formula 1. According to Formula 1, "n" represents an integer of 1 to 4. The inventors explain that the copolymer of the invention has a desirable triboelectric series adjusting function, a desirable anti-blocking property under heat and pressure, good compatibility with the polymer binder, and good solvent solubility when "n" is in the range of 1 to 4 (page 9, line 15 to page 10, line 10). In addition, it is noted that the total number of fluorine atoms is from 2 to 9 in the portion of "-O-(R²)-(CF₂)_nX" when "n" is 1 to 4.

Sampei discloses Formula (A-a) at col. 6, and lists monomers A-1 through A-41 that fall within the scope of

Formula (A-a). Of these 41 monomers, only monomers A-1, A-2, A-3, A-5, A-6, A-8 and A-9 fall within the scope of Formula (1) of claim 1, since monomers A-4, A-7 and A-10 do not satisfy the " $-(CF_2)_nX$ " portion of Formula 1, and since "n" is greater than 4 for monomers A-11 through A-41. Thus, only 7 out of the total 41 monomers disclosed in Sampei fall within the scope of Formula (1) of claim 1.

Sampei does not suggest that a superior photothermographic material is obtained when a monomer of Formula (1) is employed. Rather, Sampei equates all 41 monomers. Sampei provides no teaching or suggestion to select the 7 monomers out of 41 total monomers. Thus, Sampei does not teach or suggest the superiority of the monomers of the present invention, and Sampei does not lead one of skill in the art to select the 7 monomers.

Applicants have provided a Declaration of Mr. Nakajima in order to demonstrate that a superior photothermographic material is produced using a monomer falling within Formula 1 of claim 1. Applicants note that the Declaration is presently unexecuted. However, the information contained therein originated with Mr. Nakajima and is therefore entirely reliable. It is respectfully requested that the unexecuted Declaration be considered to expedite

prosecution of this Application. An executed copy of the Declaration will be forwarded as soon as it is available.

Mr. Nakajima prepared copolymers FS-5 and FS-6 disclosed in Table 1 at col. 19 of Sampei. Copolymers FS-5 and FS-6 were chosen since they are considered to be similar to the copolymers of the invention. Copolymers FS-5 and FS-6 contain compound A-17 of Sampei illustrated at col. 7. Compound A-17 has an "n" value of 9 and contains 18 fluorine atoms.

Coating Compositions C-FS5 and C-FS6 were prepared employing Copolymers FS-5 and FS-6. Comparative Samples S-FS5 and S-FS6 were in turn prepared employing Coating Compositions C-FS5 and C-FS6. The composition of Comparative Samples S-FS5 and S-FS6 are shown in Table A2 of the Declaration. Table A2 also illustrates the composition of Inventive Samples 10-15 disclosed in Table 2 at page 77 of the Application. The Examiner will note that Comparative Samples S-FS5 and S-FS6 contain compound A-17 of Sampei which does not fall within the scope of Formula (1) of claim 1.

Comparative Samples S-FS5 and S-FS6 were evaluated for electrostatic charge, adhesion at high temperature, adhesion at high humidity and for back layer coating characteristics. The results of these evaluations are

illustrated in Table A of the Declaration. Table A also illustrates the results of these evaluations for Inventive Samples 10-15 as reported in Table 2 at page 77 of the Application including the back layer coating characteristic results.

Table A demonstrates that the photothermographic material containing the monomer of Formula (1) is superior to the photothermographic material containing monomer A-17 of Sampei. Specifically, Inventive Samples 10-15 have a lower amount of electric charge, a lower degree of adhesion at high temperature, and a lower degree of adhesion at high humidity compared to Comparative Samples S-FS5 and S-FS6. In addition, no phase-separation was observed on the coated surface for Inventive Samples 10-15, while obvious phase-separation was observed for Comparative Samples S-FS5 and S-FS6.

Mr. Nakajima has therefore demonstrated the superiority of the monomers of Formula (1) of claim 1 compared to monomer A-17 of Sampei that does not fall within the scope of Formula (1). Sampei does not provide any suggestion to one of skill in the art to select a monomer of Formula (1) of claim 1 from the 41 total monomers that are listed at cols. 6-10.

It is therefore respectfully submitted that the present invention is not obvious over Sampei based on the Declaration of Mr. Nakajima, since Sampei does not teach or suggest the superior photothermographic material that is produced employing a monomer of Formula (1).

F. Rejections under 35 USC 103(a) based on Yonkoski

Claims 1-3, 8 and 9 had been rejected as being unpatentable over Yonkoski (US 5,532,121). Yonkoski had been cited to teach a photothermographic material having a copolymer derived from a fluorinated, ethylenically unsaturated monomer and a polar, ethylenically unsaturated monomer (col. 6, lines 31-36).

1. The monomer of Yonkoski is hydrophilic, not hydrophobic

Yonkoski explains that the fluorinated polymer is composed of at least one polar, ethylenically unsaturated monomer. The Examiner will appreciate that a polar molecule is a hydrophilic molecule that ionizes in solution. The inventors explain at page 3, line 22 to page 4, line 5 that polar molecules adhere to the sheet feeding rollers, become sticky at high humidity and are difficult to dissolve when the coating solvent is an organic solvent.

In contrast to Yonkoski, the monomer of claim 1 is a hydrophobic monomer. Yonkoski does not teach or suggest a photothermographic material having a hydrophobic monomer. Thus, Yonkoski does not teach or suggest the photothermographic material recited in claim 1. It is respectfully submitted that the present invention is patentable over Yonkoski.

G. Rejections under 35 USC 103(a) based on Yonkoski and Arimoto

Claim 10 had been rejected as being unpatentable over Yonkoski in view of Arimoto (US 6,475,697). Arimoto had been cited to teach the polyester copolymer and tin oxide compound of the invention.

Arimoto does not teach or suggest a photothermographic material having a monomer represented by Formula (1) of the invention and a monomer having a hydrophobic group as recited in claim 1 of the present invention. It is therefore respectfully submitted that the present invention is patentable over all of the cited references taken alone or in combination.

H. Conclusion

In view of the foregoing and the enclosed Declaration, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any extensions of time or fees be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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